

**WHAT IS CLAIMED IS:**

1. An optical deflection device comprising:
    - a base member;
    - a polygon mirror which is formed into a regular
    - 5 polygon and has a reflecting surface on each peripheral end face;
    - a flange member which holds said polygon mirror and rotates with respect to said base member; and
    - a press member which presses said polygon mirror
    - 10 against said flange member,

wherein surface roughening is performed for at least one of a holding surface of said flange member which holds said polygon mirror and a held surface of said polygon mirror which is held by the holding surface, and the

  - 15 holding surface and the held surface are bonded with an adhesive.
2. An apparatus according to claim 1, wherein the surface roughening includes abrasive blasting.
  3. An apparatus according to claim 1, wherein a
  - 20 surface roughness ( $R_y$ ) of the holding surface and/or the held surface having undergone surface roughening satisfies a conditional expression:
$$3 \mu\text{m} \leq R_y \leq 20 \mu\text{m}$$

where  $R_y$ : maximum height (JIS B0601)
  - 25 4. An apparatus according to claim 1, wherein the adhesive has a Young's modulus of not more than 1,700 MPa and preferably not more than 1,144 MPa at 25°C.

5. An apparatus according to claim 1, wherein said polygon mirror is rotated at a rotational speed of not less than 50,000 rpm.

6. An image printing apparatus comprising an optical  
5 deflection device defined in claim 1.

7. An apparatus according to claim 1, wherein said polygon mirror and said flange member are formed from aluminum.

8. An optical deflection device manufacturing method  
10 comprising the steps of:

integrally fitting a flange member on a bearing;

performing flat work for a holding surface of the flange member arranged to hold a polygon mirror having a plurality of reflecting surfaces so as to become a surface  
15 perpendicular to an axis of rotation of the bearing;

performing surface roughening for the holding surface of the flange member;

applying an adhesive between the holding surface of the flange member and a held surface of the polygon mirror  
20 held by the holding surface; and

mounting a press member which presses and biases the polygon mirror against the flange member.

9. A method according to claim 8, wherein the surface roughening includes abrasive blasting.

25 10. A method according to claim 8, wherein a surface roughness  $R_y$  of the holding surface having undergone surface roughening satisfies a conditional expression:

$$3 \mu\text{m} \leq R_y \leq 20 \mu\text{m}$$

where  $R_y$ : maximum height (JIS B0601)

11. A method according to claim 8, wherein the adhesive has a Young's modulus of not more than 1,700 MPa  
5 and preferably not more than 1,144 MPa at 25°C.

12. A method according to claim 8, wherein the polygon mirror is rotated at a rotational speed of not less than 50,000 rpm.